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# A-E Construction Specification

SUBCONTRACT NO. L9169703

PROJECT FILE NO. 020973

# INTEC CERCLA Storage Pad Area CPP-92 and Low-Level Waste Holding Area

APPROVED FOR CONSTRUCTION

[The following statement is optional:
Prepared for:
U.S. Department of Energy
Idaho Operations Office
Idaho Falls, Idaho]

INEEL
Idaho National Engineering & Environmental Laboratory
BECHTEL BWXT IDAHO, LLC

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**INTEC CERCLA Storage Pad Area CPP-92 and Low-Level Waste Holding Area**

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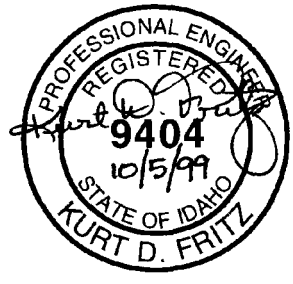
**INTEC CERCLA Storage Pad Area CPP-92**
**and**
**Low-Level Waste Holding Area**

The following Sections of this Specification were prepared under the direction of the Professional Engineer as indicated by the seal and signature provided on this page. The Professional Engineer is registered in the State of Idaho to practice Civil Engineering.




Division 1 -- General Requirements

01005 -- Summary of Work

Division 2 -- Site Work

02200 -- Earthwork
02444 -- Chain Link Fence
02513 -- Asphalt Concrete Paving
02576 -- Pavement Sealing
09910 -- Pavement Markings

SECTION III
SPECIFICATIONS
FOR
INTEC CERCLA STORAGE PAD AREA CPP-92 AND LOW-LEVEL WASTE
HOLDING AREA

Prepared for:

U.S. DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE

Idaho Falls, Idaho

Subcontract No. L9169703
SPC No. 218
October, 1999

Bechtel B&W Idaho
Idaho Falls, ID 83415

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**INTEC CERCLA Storage Pad Area CPP-92**
**and Low-Level Waste Holding Area**

SECTION 01005--SUMMARY OF WORK

PART 1--GENERAL

SUMMARY:

The Subcontractor shall furnish plant, labor, material, equipment, and supplies (except Government-furnished materials and/or equipment) and perform work and operations necessary to construct the aphalt concrete storage pads complete, in accordance with the subcontract drawings and these specifications. The pad on the south is the CERCLA Storage Pad and the north pad is the Low-Level Waste Holding Area.

Section Includes: Work includes, but is not limited to:

As shown on the contract drawings, construct two asphalt concrete storage pads, re-grade and construct ditches around the pads, pave a 20 foot wide access to existing CPP-1681, and install a chainlink fence around the south pad.

REFERENCES:

The following documents, including others referenced therein, form part of this Section to the extent designated herein.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910 OSHA General Industry Safety Standards
29 CFR 1926 OSHA Construction Industry Safety Standards

LOCKHEED MARTIN IDAHO TECHNOLOGIES COMPANY (LMITCO)

Construction Management Environmental, Health and Safety Requirements

Unless otherwise specified, references in these specifications or on the subcontract drawings to other specifications, codes, standards or manuals which are part of these specifications, but not included herein, shall be the latest edition, including any amendments and revisions, in effect as of the date of this Specification.

SUBMITTALS:

Submittals include, but are not limited to the following:

Shop Drawings and Vendor Data: Copies of shop drawings and vendors' data, as required by the Vendor Data Schedule for materials and equipment to be furnished by the Subcontractor

shall be submitted by the Subcontractor. When the Subcontractor proposes an "equal" item, data shall be submitted to the Contractor in such detail to clearly illustrate that the item, including components and fabrication thereof, or that adjustment of features to make the item "equal", meets requirements of the subcontract drawings and specifications. The Subcontractor shall submit data for "equal" approval and obtain the Contractor's approval before committing to purchase the proposed "equal" item.

QUALITY ASSURANCE:

Quality Assurance Program requirements shall exist to assure that work performed is in conformance with the requirements established by the drawings and this specification. QA Program criteria applicable to this scope of work is addressed in SC-5 of the Special Conditions and these specifications.

Standard Products: The materials and equipment furnished by the Subcontractor shall be standard products of manufacturers regularly engaged in the production of the type of materials and equipment required and shall be of the manufacturer's latest standard designs. Where two or more units of the same type and class of material or equipment are required, the units shall be the product of the same manufacturer, and shall be identical insofar as possible. The component parts of a unit of equipment need not be the products of the manufacturer.

Repair of Damages:

General: Construction materials, equipment, and other exposed finished surfaces shall be protected from damage at all times during shipping, handling, construction and installation. Materials and equipment repaired or replaced by the Subcontractor shall be subject to acceptance by the Contractor.

SAFETY, HEALTH AND ENVIRONMENT:

In general work shall be in compliance with the applicable sections of 29 CFR 1910, 29 CFR 1926 and the LMITCO Construction Management Environmental, Health, and Safety Requirements.

DELIVERY STORAGE AND HANDLING

All materials normally packaged shall be delivered to the site in the original, unopened packages with labels intact. Upon arrival, the Subcontractor shall be inspect the materials or equipment for damage.

Materials and equipment shall be stored and handled in accordance with the manufacturer's instructions.

PART 2--PRODUCTS

MATERIALS:

New Materials and Equipment: Materials and equipment received by the Subcontractor in a damaged condition shall be repaired or replaced by the Subcontractor as directed by the Contractor. Materials and equipment damaged by the Subcontractor shall be repaired or replaced by the Subcontractor.

Existing Materials, Equipment and Structures: Existing materials, equipment and structures, including paint and protective coatings, involved under this Subcontract shall be thoroughly inspected by the Subcontractor before starting any work. Any defects or damages, the repair of which are not covered under these specifications or subcontract drawings, shall be reported in writing to the Contractor by the Subcontractor. The Subcontractor shall place reinstalled operating equipment in an operating condition that is at least as good as it was at the time the Subcontractor started work.

Government Furnished Materials (GFE): Items shown on the subcontract documents as (GFE) are materials and/or equipment that is furnished by the Government to be installed by the Subcontractor. A complete and composite list of such material is attached to the Subcontract Specifications and is referred to as the **Schedule "X"** list.

Hazardous Chemicals and Substances: The Subcontractor shall comply with applicable requirements of 29 CFR 1926.59, Hazard Communication Standard.

PART 3--CONSTRUCTION AND INSTALLATION

General: Materials and equipment shall be erected or installed only by qualified personnel who are regularly engaged in the trades required to complete the work. The subcontract drawings show the general arrangement and space allocation of the equipment specified. It shall be the Subcontractor's responsibility to verify changes in conditions or rearrangements necessary because of substitutions for specified materials or equipment. Where rearrangements are necessary the Subcontractor shall, before construction or installation, prepare and submit drawings of the proposed rearrangement for approval.

Coordination of Work: Where new work and existing facilities are shown on the drawings, but are not located precisely by dimensions, the Subcontractor shall be responsible for proper location and clearances and for correcting discrepancies and interferences in the work which are a result of his operations. Work done by one trade that must be integrated with work of other trades shall be laid out with due regard to the work done, or to be done, by other trades; particularly if the work done by one trade depends upon completion or proper installation of work done by other trades. The Subcontractor shall cooperate in coordinating his work with work being done by others if their work must be integrated with the Subcontractor's work.

The Subcontractor shall notify the Contractor at least one week prior to starting of the date on which the Subcontractor proposes to proceed with the work.

Workmanship: Work shall be done in a skillful and workmanlike manner. The Subcontractor shall do structural cutting, fitting, patching, repairing and associated work necessary for installation of equipment, piping and electrical conduits, etc. No major cuts or holes, not shown on the drawings, shall be made without prior approval of the Contractor. After the equipment and/or piping is installed, exposed holes, cracks and other defects shall be neatly patched and the patched areas shall match the adjoining materials and finish.

END OF SECTION 01005

SECTION 02200--EARTHWORK

PART 1--GENERAL

SUMMARY:

Section Includes: Work includes, but is not limited to:

Grading existing material as required.

Placing and preparing subbase and drainage courses as required.

Compacting all backfill as specified herein.

Finish grading and grading for surface drainage.

REFERENCES:

The following documents, including others referenced therein, form part of this Section to the extent designated herein.

AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO)

| | |
|---|---|
| | Standard Specifications for Transportation Materials and Methods of Sampling and Testing |
| AASHTO M145 | Recommended Practice for the Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes |
| AASHTO T11 | Standard Method of Test for Materials Finer Than 75 Micrometer (No. 200) Sieve in Mineral Aggregates by Washing |
| AASHTO T27 | Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates |
| AASHTO T99 | Standard Method of Test for the Moisture-Density Relations of Soils Using a 5.5 lb (2.6 kg) Rammer and a 12 in. (305 mm) Drop |
| AASHTO T238 | Standard Method of Test for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |

CODE OF FEDERAL REGULATIONS

| | |
|---|---|
| 29 CFR 1926 | OSHA General Industry Safety Standards, Subpart P |

IDAHO TRANSPORTATION DEPARTMENT (ITD)

| | |
|---|---|
| SSHC | Standard Specification for Highway Construction |

SUBMITTALS:

Submittals include, but are not limited to the following:

No Vendor Data required for this section unless an "or-equal" item is proposed.

PART 2--PRODUCTS

MATERIALS:

Satisfactory Soil Materials: Satisfactory soil materials are defined as those complying with AASHTO M145, soil classification Groups A-1, A-2-4, A-2-5, and A-3.

Unsatisfactory Soil Materials: Unsatisfactory soil materials are those defined in AASHTO M145 soil classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat and other highly organic soils.

Backfill and Fill Material: "Satisfactory" soil materials free of clay, rock, gravel larger than 3 in. in any dimension, debris, waste, frozen materials, vegetable and other deleterious matter. Select pit run gravel is available at the CFA and TRA gravel pits. Gravel pit material and use of the gravel pits shall be at no cost to the Subcontractor. Upon completion of operations involving fill material removal, the Subcontractor shall grade and reshape the disturbed areas. Sloped surfaces shall meet the requirements of OSHA 29 CFR 1926.

Base or Leveling Course Material: Naturally or artificially graded mixture of 3/4 in. maximum size crushed gravel, crushed stone, natural and crushed sand. Material shall meet the requirements of ITD subsection 703.04.

PART 3--EXECUTION

EXCAVATION:

Grading Surface Material: The area to be occupied by the new asphalt concrete storage pads shall be re-graded to the required slope elevations as shown on the drawings. The south storage pad shall have approximately one foot of the existing soil removed and the resulting area compacted to 95%. The removed soil shall then be replaced in two 6 inch lifts and compacted to 95% The resulting area shall be completely compacted in accordance with the applicable part of these specifications except in those cleared areas where further excavation is required. Excess graded material shall be used for grading ditch side slopes and evenly distributed over the pad area. No excavated material shall be removed from the site. Excess material from re-grading the north pad shall be evenly distributed in the area designated on the drawings.

Earth Excavation: Earth excavation includes removal and disposal of pavements and other obstructions visible on the ground surface, underground structures and utilities indicated to be demolished and removed, soil material of any classification, and other materials encountered that are not classified as rock excavation or unauthorized excavation.

Rock Excavation: No rock excavation is anticipated.

Unauthorized Excavation: Unauthorized excavation consists of removal of materials beyond indicated elevations or dimensions without specific direction by the Contractor. Unauthorized excavation, as well as remedial work directed by the Contractor, shall be at the Subcontractor's expense.

Structural: Excavations for such structures as footings, foundations, and slabs shall be made to the depths shown on the drawings and of sufficient width to allow adequate room for setting and removing forms, installing accessories and inspection. Where concrete foundations or slabs are to be constructed on material other than rock, care shall be taken to prevent disturbing the bottom of the excavation. Excavation to final grade shall not be made until just before concrete forms are to be placed therein. Concrete foundations shall be placed only on undisturbed soil or rock.

Trenches: Trenches shall be of sufficient width to provide adequate room for workmen to perform any necessary service to the materials or items being installed therein and to permit proper compaction of the backfill.

Unstable Soils: If wet or otherwise unsatisfactory soil is encountered in an excavation, at or below the excavation line, it shall be brought to the attention of the Contractor and removed as directed in accordance with Article 38 , "Differing Site Conditions", of the General Provisions. The bottom of the excavation shall then be brought to the required grade with concrete or compacted backfill as specified hereinafter. Excavation of unstable soil resulting from the Subcontractor's neglect to keep the excavated opening dry, and other over depth excavation not required to satisfactorily complete the work, shall be brought up to the required grade with concrete or compacted backfill as specified hereinafter at the Subcontractor's expense.

Control of Water: All excavations shall be kept free of standing water. The Subcontractor shall furnish, install and operate the equipment required to keep excavations free from water at all times. Water shall be disposed of in a manner that will not cause injury to property.

Roads and Sidewalks: Where excavations are required across roads or streets, one lane shall be kept open to traffic at all times unless otherwise directed

BACKFILL OR FILL:

General: The excavations shall be cleared of all trash and debris prior to backfilling or filling. All backfill or fill material shall be free from trash, organic matter and frozen particles.

Backfilling or filling shall be done only when approved by the Contractor. In excavations that are shored, shoring and formwork shall be removed or raised as backfill or fill is placed.

Under Pavement: Backfill or fill materials under asphalt pavement shall be compacted fill material as specified in the "Materials" section, except that the last 4 in. of such fill shall be compacted leveling course material.

Placement: Concentrated dumping of backfill or fill material into excavations will not be permitted. No water shall be used for placing, settling or compacting backfill or fill except to obtain optimum moisture content. All material must be placed in uniform layers not to exceed 8 in. loose measurement and brought up simultaneously and evenly on both sides of foundation walls and around underground or covered structures and equipment such as culverts, manholes, storage tanks and pipe. Backfill or fill around piping, and at least 4 in. over, shall be hand placed and compacted prior to pressure testing. Pipe joints shall be left exposed until leak testing has been completed. Care shall be taken when backfilling, filling, or compacting around any buried items or dampproofed walls to prevent injury to the item being covered and to prevent piercing or rupturing the insulation, coating or dampproofing membrane. Loose backfill or fill may be placed as specified hereinafter.

Compaction: Unless otherwise indicated on the drawings or specifications, compact all backfill and fill material under slabs, roads, and other surfaced areas, around foundation walls, culverts, underground tanks and other similar structures and to at least 4 in. compacted depth above all piping in trenches. Unless otherwise indicated, all "compacted" backfill or fill shall be compacted to at least 95% of maximum density at optimum moisture content as determined by AASHTO T99. Each 8-in., maximum, loose measurement lift shall be compacted before the next lift is placed thereon. Compacted backfill or fill density and moisture content may be measured by the Contractor at any location and depth. Sections of backfill or fill failing to meet the minimum compaction requirements shall be corrected prior to placement of subsequent lifts. No heavy equipment shall be allowed within 5 ft of a structure or the foundation of any structure. No heavy equipment shall be allowed over piping until a minimum of 24 in. of backfill has been compacted over the piping.

FIELD QUALITY CONTROL:

Surveillance will be performed by the Contractor's Representative to verify compliance of the work to the drawings and specifications.

END OF SECTION 02200

# SECTION 02444--CHAIN LINK FENCING

## PART 1--GENERAL

### SUMMARY:

The Subcontractor shall provide all labor, material, and equipment to construct the fence in accordance with the drawings and these specifications.

Section Includes: Work includes, but is not limited to:

Furnish and install the fencing as shown on the drawings, including gates and all hardware, complete and ready to use.

### REFERENCES:

The following documents, including others referenced herein, form part of this Section to the extent designated herein.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| ASTM A 90 | Standard Test Method for Weight (Mass) of Coating on Iron and Steel Articles With Zinc or Zinc-Alloy Coatings |
| ASTM A 153 | Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware |
| ASTM A 392 | Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric |
| ASTM F 669 | Standard Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence |
| ASTM F 1083 | Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures |

IDAHO TRANSPORTATION DEPARTMENT (ITD)

Standard Specifications for Highway Construction (SSHC)
1995 Edition,
Field Test Manual, Part I, Sampling and Test Methods

### SUBMITTALS:

No Vendor Data required for this section.

## PART 2--PRODUCTS

### MATERIALS:

Posts, Rails, and Braces: All posts, rails, braces and appurtenances shall be hot-dipped zinc coated per ASTM A 123, or A 153, whichever is applicable. Line posts shall be 2.38 in. O.D. x 3.65 lb/ft. Corner and pull posts shall be 4.5 in. O.D. x 10.79 lb/ft. Bracing shall be 1.66 in. O.D. x 2.27 lb/ft unless otherwise indicated on the drawings. Gate posts shall be as indicated on the drawings.

Chain Link Fabric: Metal fence fabric shall be No. 9 gage wire woven into a 2-in. mesh. Fabric finish shall be hot-dipped zinc galvanized per ASTM A 392. Finish shall provide not less than 1.0 oz. of zinc per sq ft of fabric when tested in accordance with ASTM A 90.

Hardware and Accessories: All hardware and accessories shall be galvanized to comply with ASTM A 153, Table I.

Wire Ties: Use 9 gage minimum aluminum wires for tying chain link fabric to rails, posts and braces.

Tension Wire: Tension wire shall be 7 gage, coated coil spring wire with metal and finish matching that of new fabric. Locate at bottom of chain link fabric on new fence.

Swing Gate: The swing gate shall be a single leaf swinging gate with capacity to open to 180 degrees. Gate posts and frame shall be of galvanized pipe as shown on the drawings.

Grounding Material: Grounding material shall conform to the requirements given on the drawings.

Concrete: Concrete for fence posts shall be Class 30 (3000 psi) per SSHC, Section 502.

No test cylinders shall be required for fencing work.

PART 3--EXECUTION

INSTALLATION/-ERECTION:

General: Drill holes for post footings in firm, undisturbed or compacted (95%) soil. Place concrete around posts in a continuous pour, tamp for consolidation. Verify that each post is plumb and at the proper elevation and alignment. Set keepers, stops, sleeves and any other accessories into concrete as required.

It is not anticipated that rock drilling will be required for the placement of the posts. If required, it shall be brought to the attention of the Contractor's Representative.

Top Rails: Run rail continuously through post caps. Provide expansion couplings as recommended by fencing manufacturer.

Center Rails: Install in one piece between posts and flush with post on fabric side, using special offset fittings where necessary.

Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.

Steel Fabric: Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on sides of posts exterior to the enclosed area and anchor to framework so that fabric remains in tension after pulling force is released.

Stretcher Bars: Thread through or clamp to fabric every 4 in., and secure to posts with metal bands spaced 16 in. o.c.

Tie Wires: Use U-shaped wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least 2 full turns. Bend wire to minimize hazard to persons or clothing.

Tension Wire: Install tension wire on new fence before stretching fabric and tie to each post with not less than 9 gage galvanized wire. Fasten fabric to tension wire using 11 gage galvanized steel hog rings spaced 24 in. o.c. Install tension wire with chain link fabric only. Do not use with plastic fence fabric.

Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side.

Gates: Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage, as recommended by fence manufacturer. Adjust hardware for smooth operation and lubricate where necessary. Hinges shall be installed to prevent removal by lifting off.

FIELD QUALITY CONTROL:

Surveillance will be performed by the Contractor's Representative to verify compliance of the work to the drawings and specifications.

END OF SECTION 02444

# SECTION 02513--ASPHALT CONCRETE PAVING

## PART 1--GENERAL

### SUMMARY:

Provide all work, operations and material required to construct asphalt paving in accordance with the project drawings and these specifications.

Section Includes: Work includes, but is not limited to:

Furnish and apply asphalt tack coat.

Haul, place and compact asphalt concrete mix.

### REFERENCES:

The following documents, including others referenced herein, form part of this Section to the extent designated herein:

AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (AASHTO)

| | |
|---|---|
| AASHTO | Standard Specifications for Transportation Materials and Methods of Sampling and Testing |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| ASTM D 946 | Standard Specification for Penetration Graded Asphalt Cement for use in Pavement Construction. |
| ASTM D 2922 | Standard Test Methods for Density of Soil and soil-Aggregate In Place By Nuclear Methods (Shallow Depth) |
| ASTM D 4791 | Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate |

IDAHO TRANSPORTATION DEPARTMENT (ITD)

Standard Specifications for Highway Construction (SSHC)
1995 Edition,
Field Test Manual, Part I, Sampling and Test Methods

### SUBMITTALS:

Submittals include, but are not limited to the following:

The subcontractor shall submit the following information, unless the same gradation and mix design has been used on the INEEL within the past two years. However, the subcontractor is required to submit the sieve reports and mix design from that particular mix.

Sample: Submit a 200-lb sample of aggregate to an independent test laboratory for testing.

Sieve Test report: Submit sieve test report for approval.

Mix Design Test Report: Submit results of the asphalt concrete mix design test .

QUALITY CONTROL:

Codes and Standards: Comply with provisions of the following codes, specifications and standards unless otherwise specified herein. Idaho State Specifications are available for inspection at offices of the Division of Highways, State of Idaho, and the Department of Energy (DOE), Idaho Operations Office Headquarters.

| | |
|---|---|
| AASHTO | Standard Specifications for Transportation Materials and Methods of Sampling and Testing |
| ASTM D 946 | |
| SSHC | Standard Specifications for Highway Construction (SSHC) 1995 Edition, |
| Field Test Manual, Part I, Sampling and Test Methods | |

PART 2--PRODUCTS

Asphalt: The asphalt cement shall be Viscosity Grade AC-5. Asphalt shall meet applicable requirements of Section 702 of the SSHC, AASHTO M226/Table 1, and ASTM D 946.

Crushed Gravel Aggregate: The master gradation for aggregate for the plant mix pavement shall be as follows:

| Sieve | Percent Passing |
|---|---|
| 3/4 | 100 |
| 1/2 | 90 - 100 |
| No. 4 | 51 - 61 |
| No. 8 | 37 - 47 |
| No. 50 | 18 - 26 |
| No. 200 | 5 - 10 |

Tack Coat: The tack coat shall be an emulsified asphalt, SS-1 or SS-1h, diluted with one part water to one part emulsified asphalt, meeting the applicable requirements of Section 702 (SSHC).

PART 3--EXECUTION

QUALITY CONTROL TESTING:

Contractor Supplied Testing: The following tests may be performed by others at no cost to the Subcontractor.

AASHTO T99 (Standard Proctor) for density of the base course.

AASHTO T238 (ASTM D 2922) for moisture-density relationship of base course in place and asphalt concrete in place.

Idaho T125 (Nuclear Densimeter) for asphalt concrete in-place density.

Idaho T87 for surface smoothness of finished pavement.

Subcontractor Supplied Testing (not required for mix designs used on the INEEL within the past two years): The Subcontractor shall supply a 200-lb sample of aggregate to an independent test laboratory to determine the gradation and mix design. A sieve report shall be submitted for approval.

The test methods shall be in accordance with the following:

| | |
|---|---|
| Mechanical Analysis | AASHTO T27 |
| Passing a No. 200 Sieve | AASHTO T11 |

A tolerance of 2% in the amount passing the maximum size screen will be permitted to allow for reasonable screen wear, providing all oversize material passes a screen having 1/8 in. larger opening.

Composition of Mixture: The asphalt concrete shall be composed of a mixture of aggregate, filler if required, and asphalt. The mix design shall be tested by an independent test laboratory based on the aggregate gradation before mentioned, and shall meet the following criteria:

Marshall Method:

| | |
|---|---|
| Stability: | 500-lb minimum |
| Flow: | 8 to 20 |
| Air Voids: | 3% to 5% |

HVEEM Method:

| | |
|---|---|
| Stability: | 37 minimum (See 405.02 of SSHC) |

| | |
|---|---|
| Swell: | Less than 0.030 in. |
| Air Voids: | 3% to 5% |

The mix design test results shall be submitted for approval, and the approved design mix shall be in effect unless modified in writing by the Contractor.

After the mix design is established, all mixtures furnished for the project shall conform thereto within the following ranges of tolerances:

| | |
|---|---|
| Passing No. 4 and Larger Sieves | $\pm$ 7% |
| Passing No. 8 to No. 100 Sieves, inclusive | $\pm$ 4% |
| Passing No. 200 Sieve | $\pm$ 2% |
| Asphalt | $\pm$ 0.4% |
| Temperature of Mixture | $\pm$ 20° F |

Should a change in sources of material be made, a new mix design shall be established before the new material is used; when unsatisfactory results or other conditions make it necessary, the Contractor may establish a new mix design.

The aggregate and asphalt shall be mixed in accordance with SSHC Section 405.11.

EARTH EXCAVATION:

Excavate existing earth to subgrade elevations where required to permit placement of base material to the depth shown on the drawings. Construction of ditches shall be considered as earth excavation. Dispose of excavated material in accordance with Division 2 Section, "Earthwork".

SURVEYING:

The subcontractor shall be responsible for providing surveying necessary to establish the lines, grades, and typical cross sections shown on the drawings. As a minimum, blue-tops shall be used for finish placement of the gravel leveling course.

PLACING PIT RUN GRAVEL FILL:

General: Construct pit run gravel bases, including the preparation of the subbase upon which the gravel is to rest, in accordance with this specification, and to the lines, grades, and typical cross sections shown on the drawings.

Construction Requirements: Prior to placement of the pit run gravel base, the existing subbase shall be stripped of all vegetation, brought to optimum moisture content, and compacted to at least 90% maximum density as determined by the AASHTO T99.

At locations where the required compacted depth of the pit run course exceeds 0.5 ft, the base shall be constructed in 2 or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 0.5 ft. When vibrating types of special compacting equipment are used, the compacted depth of a single layer of the base course may be increased to 0.8 ft upon approval.

Material containing excessive moisture shall be permitted to dry to a moisture content that will permit the required compaction. No extra payment will be made for rehandling such material to permit drying. Material that does not contain sufficient moisture to compact to the required density shall be uniformly moistened as required. Use watering equipment specified in this specification section.

Materials not compacted to the specified density shall be excavated and recompacted to the requirements for the class of compaction specified at no cost to the Government.

Compaction: Each layer shall be uniformly compacted to 95% of maximum density as determined in accordance with AASHTO T99.

PLACING CRUSHED GRAVEL LEVELING COURSE:

General: Furnish and place crushed gravel as a leveling course and as shoulder protection in accordance with the plans and specifications.

Construction Requirements: Crushed gravel shall be mixed by motor graders or other approved equipment until the mixture is uniform throughout. During the mixing, water shall be added in an amount necessary to facilitate compaction. Use watering equipment specified in this specification.

Compaction: After each layer has been spread it shall be compacted for its full width. The choice of compaction equipment will be left to the Subcontractor. Compaction shall continue until not less than 95% of the maximum density is attained, determined in accordance with AASHTO T99.

SURFACE PREPARATION:

Existing asphalt shall be cleaned to permit adhesion of bituminous materials. The prepared base shall be kept in repair at all times in advance of placing the plant mix pavement. Holes or depressions shall be filled level with bituminous surfacing, brought to the required grade and compacted. Do not commence placing asphalt until all conditions are satisfactory.

Tack Coat: Apply to contact surfaces of previously constructed asphalt and surfaces abutting or projecting into asphalt concrete pavement. Distribute at rate of 0.10 gal per sq yd of surface.

Allow to dry until the tack coat has reached the proper condition to receive paving.

PLACING AND FINISHING ASPHALT CONCRETE:

General: Prior to placing the mixture on the roadbed, the prepared base shall be satisfactorily cleaned of all loose and foreign material. Uniformity of temperatures of the mixture delivered to the paver shall be such that the temperature of any one load shall not vary more than 20° F from the average of the preceding five loads. The material shall be placed to the specified thickness. Placing of the paving mixture shall be as continuous as possible.

Joints: Longitudinal joints shall be smooth, straight, and show no segregation of material. Should irregularities in the edge of the surface appear, the previous lane shall be cut back to a vertical face before placing adjacent material. Any material removed in cutting back the course to a vertical face shall be removed and wasted.

Transverse joints shall be formed by cutting back on the previous run or existing asphalt to expose the full depth of the course. A brush coat of SS-1 emulsified asphalt shall be used on contact surfaces of transverse joints, cold longitudinal joints, and existing asphalt edges just before additional mixture is placed.

Cuts shall be straight and clean.

Rolling: The asphalt concrete shall be compacted as quickly as possible after placing. Breakdown rolling shall follow the paver as closely as possible. Intermediate rolling shall follow immediately behind the breakdown rolling. Compaction of the pavement shall continue until the pavement density is 96% of that specified in the approved laboratory report. Testing of the plant mix density will be performed according to Idaho Department of Highways Method of Test T125 (Nuclear Densimeter). All breakdown and intermediate compaction shall be performed while the mixture temperature is above 180° F. Finish rolling shall be performed at as high a temperature as practicable and shall eliminate marks from previous rolling. Finish rolling shall be done the same day as the paving. Rollers shall not pass over the unprotected end of a freshly laid mixture.

Surface Smoothness: The completed surface will be inspected in accordance with Idaho Transportation Department Division of Highways Method of Test T87. The surface shall not vary more than 1/4 in. from a 10-ft straight edge.

Weather Limitations: Plant mix material shall not be placed on a wet or frozen surface, when the air temperature is below 40° F, or when weather or surface conditions otherwise prevent the proper handling or finishing of the plant mix material.

EQUIPMENT REQUIREMENTS:

Mixing Plant: The mixing plant shall conform to the applicable portions of Section 405.06 SSHC and be capable of producing up to 250 tons per hour.

Hauling Equipment: Trucks used for hauling plant mix materials shall have tight, clean, smooth metal beds. When necessary each truck shall have a cover of canvas or other suitable material of such size as to protect the mixture from the weather. When necessary, so that the mixture will be delivered on the road at the specified temperature, truck beds shall be insulated and covers shall be securely fastened.

Paver: Pavers shall be self-propelled units, provided with an activated heated screed. Only screed extensions that produce results equal to the rest of the screed will be allowed.

The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed.

The paver shall be operated at a speed consistent with the delivery of plant mix which provides for a smooth, uniform forward travel with the least stops.

The screed shall be equipped with automatic controls which will make adjustments in both transverse and longitudinal directions. The sensing device shall pick up grade information from a ski that is a minimum of 30 ft in length. The ski may be removed when paver is required to operate in areas of limited space (parking areas, turnarounds, fillets, etc.,). In the event of failure of the automatic controls, the Subcontractor will not be permitted to resume operations until the controls are repaired.

Rollers: Nonvibrating steel-wheel rollers shall be multiple axle, self-propelled, equipped with cleaning devices and weighing from 8 to 12 tons. Pneumatic-tire rollers shall be self-propelled and constructed within the limits of 50 to 100% of the values set in groups No. 2, and 3 as set forth in Section 306 (SSHC). Rollers shall be equipped with a means of distributing the load uniformly between all wheels on at least one of the axles. The use of wobble-wheel rollers whose tires revolve in a plane that is not at right angles to the axle shaft will not be permitted. Rollers shall be multiple axle, multiple wheel type with wheels staggered on the axles and spaced so that the overlap of wheels will provide for uniform compaction for the full compacting width of roller. The air pressure in any tire shall not vary more than 5 lb from the pressure established. The rollers shall be operated at speeds of not less than 3 nor more than 8 miles per hour.

Scales: DOE-owned scales located in the Central Facilities Area may be used at no cost to the Subcontractor, or the Subcontractor may furnish his own scales. Scales shall meet the applicable portions of Section 109.01 (SSHC).

Watering Equipment: Provide water tank trucks capable of applying a uniform unbroken spread of water over the surface. A suitable device for positive shut-off and regulation of flow shall be located to permit operation by driver in cab.

FIELD QUALITY CONTROL:

Surveillance will be performed by the Contractor's Representative to verify compliance of the work to the drawings and specifications.

END OF SECTION 02513

# SECTION 02576--PAVEMENT SEALING

## PART 1--GENERAL

### SUMMARY:

Provide all work, operations and material for application of asphalt, with anti-stripping additive as required, and in accordance with the subcontract drawing(s) and these specifications.

Section Includes: Work includes, but is not limited to:

Apply seal coat to completed asphalt concrete pads and the access to CPP-1681.

### REFERENCES:

The following documents, including others referenced therein, form part of this Section to the extent designated herein.

AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (AASHTO)

| | |
|---|---|
| AASHTO | Standard Specifications for Transportation Materials and Methods of Sampling and Testing. |
| AASHTO M81 | Standard Specification for Cut-Back Asphalt (Rapid Curing type) |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| ASTM D 5 | Standard Test Method for Penetration of Bituminous Materials |
| ASTM D 113 | Standard Test Method for Ductility of Bituminous Materials |
| ASTM D 402 | Standard Test Method for Distillation of Cut-back Asphaltic (Bituminous) Products |
| ASTM D 1310 | Standard Test Method for Flash Point and Fire Point of Liquids by Tag Open-Cup Apparatus |
| ASTM D 2170 | Standard Test Method for Kinematic Viscosity of Asphalts (Bitumens) |

IDAHO TRANSPORTATION DEPARTMENT (ITD)

| | |
|---|---|
| ITD SSHC | Standard Specifications for Highway Construction ITD Field Test Manual, Part I, Sampling and Test Methods. |

### SUBMITTALS:

Submittals include, but are not limited to the following:
Certification: Submit certification that asphalt complies with these specifications.

QUALITY CONTROL:

Regulatory Requirements (Codes and Standards): Comply with provisions of the following codes and standards, unless otherwise specified herein. Idaho State Specifications are available for inspection at offices of the Division of Highways, State of Idaho, the Department of Energy (DOE), Idaho Operations Office headquarters, and Facility Engineering at the Engineering Research Office Building (EROB).

| | |
|---|---|
| AASHTO | Standard Specifications for Transportation Materials and Methods of Sampling and Testing. |
| AASHTO M81 | |
| ITD SSHC | |

BASIS OF PAYMENT:

Seal Coat Asphalt: Seal coat asphalt shall be paid for by the gallon of asphalt accepted complete in place.

PART 2--PRODUCTS

Asphalt: The asphalt shall be GSB-78 as manufactured by Asphalt Systems, Inc., P.O. Box 25511, Salt Lake City, Utah, (800)972-2757, or approved equal.

PART 3--EXECUTION

Surface Preparation: The surface shall be thoroughly broomed from edge to edge prior to application of asphalt seal coat.

Asphalt Application: Asphalt shall be applied at the rate of 0.12 to 0.14 gallons per square yard of surface.

Construction Limitations: Seal coat asphalt shall not be applied when the surface or weather conditions would prevent proper construction. Seal coating shall not be undertaken unless the pavement temperature is above 50° F, air temperature is at least 45° F and rising, during damp or wet weather, or after sundown. No seal coat shall be applied before June 15 or after September 1, unless prior written approval is obtained from the Contractor.

Equipment: Equipment shall be in accordance with Section 403.5 (SSHC).

FIELD QUALITY CONTROL:

Surveillance will be performed by the Contractor's Representative to verify compliance of the work to the drawings and specifications.

END OF SECTION 02576

# SECTION 09910--PAVEMENT MARKINGS

## PART 1--GENERAL

### SUMMARY:

This item shall consist of the painting of pavement markings on the surfaces of the roadway in accordance with these specifications and as shown on the plans or as directed.

Section Includes: Work includes, but is not limited to:

Painting stripes as shown on the project drawings.

### SUBMITTALS:

See Vendor Data Schedule. The Subcontractor shall furnish a Certificate of Conformance stating that the Paints comply with this specification.

## PART 2--PRODUCTS

### MATERIALS:

Paint: Paint shall comply with the current Idaho Transportation Department Contract Specification for no-heat, fast dry, yellow traffic line paint.

The Subcontractor shall ensure that both white and yellow paints are of the same formulation and composition except for pigments. Suppliers of this traffic striping paint are:

Morton Traffic Markings, 1675 Commercial ST N.E., Salem, OR 97303.

Columbia Paint Coating, N 112 Haven, Spokane, WA 99202.

Specification for No-Heat, Fast-Dry Traffic Paint, Yellow: Paint shall be free from foreign materials such as dirt, sand, fibers from bags or other material which can clog screens, valves, pumps or equipment used in striping. Paint shall show no evidence of excessive caking, setting, separation, livering, skinning, or corroding of the container upon storage in the bulk tanks or in the sealed container as received. Paint shall be capable of being applied with the striping equipment (airless system) to give a smooth uniform stripe without the following problems:

Solvent entrapment in the lines
Paint skinning and splattering
Excessive pressure and gun adjustments
Excessive dusting or fogging.

Pigment Composition: Pigments shall be first quality paint grade pigments. Medium chrome yellow pigment for the yellow paint shall contain a minimum of 87% lead chromate meeting the requirements of ASTM D211, Type III. The inert or filler pigments must be of a type and quality generally recognized as first quality paint grade products, and shall not contribute to setting of the paint in storage, or be so hard as to cause excessive wear of the spray application equipment.

Vehicle Composition: No alkyd, or chlorinated resins, or chlorinated solvents shall be permitted. To ensure compliance a statement of certification shall accompany all qualification samples. Sample must be received with certification of non-alkyd or chlorinated resins or solvents. Samples shall be capable of passing Federal Test Method 14 lb 5132. The paint vehicle may be any combination of natural or synthetic resinous materials. The cured paint must be permanently capable of redissolving in fresh paint. This requirement is intended to minimize buildup of paint in the bulk storage tanks and the clogging of pumps and lines with undissolved skins or gelled paint.

Solvents: The bidder shall furnish the name and numbers of the appropriate solvents for the paint, indicating the sources and cost thereof, if Toluene (Toluol) meeting Federal Specification TT-T-548, or an Industrial Grade of Toluene equal to Chevron 51-L cannot be used for paint thinning or cleanup.

Qualitative and Quantitative Requirements:

| Characteristic Method | Yellow |
|---|---|
| Consistency at 25°C (Kreb Units) | 75-90 |
| at 10°C (Kreb Units) | 95 Max. |
| Density of Paint (kg/L) | Within ± 0.036 kg/L of qualification sample |
| Total Nonvolatile (%) | 67 Min. |
| Pigments Solids (%) | 56 Max. |
| Nonvolatile Vehicle (%) | Within ± 3% of qualification sample |
| Contrast Ratio | 0.92 Min. |
| Pigment Composition (kg/L) | 0.09 kg/L Min. Ti02 Min. PbCr04 |

Qualitative and Quantitative Requirements (con't):

| Characteristic Method | | Yellow |
|---|---|---|
| Directional Reflectance (%) | | 55 Min. |
| Bleeding Ratio | | 0.90 Min. |
| Storage Stability | Settlement | 7.0 Min |
| | Separation | 7.0 Min |
| Abrasion Resistance (L) | | 50L Min. |
| Flexibility | | No Cracking, flaking, or loss of adhesion |
| Skinning | | No skinning |
| Color | | Compare to Chip 33538 |
| Vehicle Composition | | Cured paint film shall redissolve |
| No-Tracking Time (field test) | Not Tested | 40-90 Sec. |
| Package stability | | 6 Min. |
| Yellowness Index | | Not Tested |

No-Tracking Time: The paint shall be applied to smooth asphalt or concrete pavement at a wet film thickness of approximately 15 mils. Application of the glass beads shall be at a rate of 6 lb/gal of paint. The application of paint and beads shall be done with an airless striping truck. Under special circumstances of weather and pavement conditions the paint may be heat applied at a temperature not to exceed 60°C to achieve the specified dry time. Minor tracking as judged by the Contractor's Representative shall be considered as showing no-tracking, and conforming to the requirement for field dry time.

PART 3--EXECUTION

INSTALLATION:

The paint shall be applied by a spray-type marking machine with automatic controls. The equipment shall provide a uniform film thickness and markings of uniform cross-sections with clear-cut edges. Marking equipment shall be approved by the Contractor's Representative before it is brought on the project. The application of the paint by hand will be permitted only where necessary for proper forming.

FIELD QUALITY CONTROL:

Paint shall be applied only when surfaces are clean and thoroughly dry and when the air temperature is above 40°F. Paint stripes shall be placed with equipment that is capable of producing a straight line. The stripes shall be uniform and free of erratic waves. If the stripes are not satisfactorily applied, work shall be stopped until corrective action is taken. Striping shall not be eradicated by overpainting with black paint.

The width of marking shall be as designated and be within a tolerance of five percent (5%).

No thinning of paint shall be permitted. Paint shall be thoroughly mixed immediately prior to application. Should delays occur during application in which the paint is unagitated for a period greater than 15 minutes, the paint shall be thoroughly agitated until the mixture is homogenous prior to continuance of application. Paint shall be applied at a rate of not less than 1 gallon per 100 sq. ft of surface.

All pavement marking activities shall be coordinated with the Contractor's Representative before any activities begin.

All pavement markings shall conform to the current "Manual on Uniform Traffic Control Devices".

Pavement markings shall be as detailed in the plans.

Surveillance will be performed by Contractor's Representative to verify compliance of the work to the drawings and specifications.

END OF SECTION 09910

# SCHEDULE "X"

Subcontract No. : L9169703



The Government will furnish to the Subcontractor at no cost the equipment or material listed below. The equipment or material may be obtained by the Subcontractor at the time he is ready to make the installation in accordance with the provisions of the contract.

The items will be available only during normal working hours and a twenty-four (24) hour minimum advance notice (Saturdays, Sundays, and holidays excluded) to the Subcontracting Officer will be required.

Transportation costs shall be the responsibility of the Subcontractor.

| Item No. | Description | Location | Reference | Approximate Cost | Date Available |
|---|---|---|---|---|---|
| **1** | **6" Diameter CMP Culvert** | **INTEC** | **Drawing C-1** | **$0** | **10/99** |
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INEL FORM
L-0431.14#
(12-96 - Rev. #01)

# VENDOR DATA SCHEDULE



Project Title: INTEC CERCLA Storage Pad Area CPP-92 and Low-Level Waste Holding Area  Subcontract No.: L9169703

Prepared By: K. D. Fritz  Date: 10/5/99  Rev.: 0

**VENDOR DATA CODES**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A. As-Built Drawings | E. Catalog Data | I. Design Calculations | M. Parts List | Q. Qualification/Resume | U. Sample (Color, Texture, etc.) | Y. Test Report | AD. MSDS |
| B. Assembly Drawings | F. Chem & Physical Analysis | J. Installation Instructions | N. Piping Drawing | R. Quality Program | V. Shop Drawings | Z. UL/FM Listing | AE. Hardware Schedule |
| C. Attendance Record | G. Concrete Mix Design | K. Manufacturer's Data Report | O. Procedure/Instructions | S. Red-line Drawings | W. Survey Records | AA. Warranty/Guarantee | AF. Hazardous Materials |
| D. Blasting Plan | H. Control System Diagram | L. O & M Manual | P. Pump Head Curves | T. RSMI & Maintenance Log | X. Test Procedure | AB. Weld Record Package | AG. SARA Inventory |
| | | | | | | AC. Wiring Diagrams | |

**WHEN TO SUBMIT**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| AC - As Completed | BC - Before Contract Awarded | BFR - Before Fabrication Release | PTP - Prior to Purchase | PT - Prior to Test | PTI - Prior to Installation | WP - With Proposal | WS - With Shipment |
| AT - After Test | BFA - Before Final Acceptance | PDS - Prior to Delivery on Site | PS - Prior to Shipment | PTC - Prior to Construction Start | PTW - Prior to Welding | | |

| Item No. | Drawing Or Spec. Ref. | Description | VD Code/ Copies | When To Submit | Approval Code 1. App. 2. Info. | Reviewer | Receipt Insp.* |
|---|---|---|---|---|---|---|---|
| 1 | SC-15E | Hazardous Material List | AF/4 | PDS | 2 | CM | |
| 2 | SC-15E | MSDS | AD/4 | PDS | 2 | CM | |
| 3 | SC-5B | SARA Inventory | AG/4 | PDS | 2 | CM | |
| 4 | Specs/02513 | Asphalt Mix Design | P/4 | PTC | 1 | AE | |
| 5 | Specs/02200 | Aggregate Base Density Curve | M/4 | PTI | 2 | AE | |
| 6 | Specs/02576 | Pavement Sealant Certification | E/4 | PTI | 1 | AE | |
| 7 | Specs/09910 | Paint Certificate of Conformance | E/4 | PTI | 1 | AE | |
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Instructions:
1. Refer to General Provisions, Special Conditions, and Specification for instructions on submittals
2. A number preceding the Vendor Data Code indicates number of submittal copies.
*3. An X in this column indicates that the item must be examined/approved by the Contractor prior to use.